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The Effects of Parent-Teacher Communication using Digital Tools in Early Elementary and Middle School Classrooms

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The Effects of Parent-Teacher Communication using Digital Tools in Early Elementary and
Middle School Classrooms

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in fulfillment of final requirements for the MAED degree

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Abstract

This comparative action research study examined the effects of using three different digital communication tools in early elementary and middle school classrooms. Seesaw, Facebook, and Remind were compared to answer the following questions: To what extent does each digital tool facilitate: Parent-teacher communication? Quality information sharing? Active parent engagement? Teachers collected qualitative and quantitative data over four weeks. Participating parents received and responded quickly to teacher posts in all three tools at both grade levels. Parents used the information as conversation starters at home and to help their children succeed. Notably, parents whose first language is not English appreciated that Facebook and Remind translated teacher messages for them automatically. Parents responded the most to posts with personal information such as pictures, awards, or student work. Although Seesaw had much greater efficacy at the early elementary than middle school level, this may have been related to institutional factors. Parents who did not participate cited privacy concerns, lack of access, and limited availability. Tools did have distinguishing attributes/limitations for some sorts of communication and interactions. Overall, parents and teachers were highly satisfied with the use of digital parent-teacher communication methods and recommend to others. Appendixes include parent instructions, guidelines, and assessments that may be useful for implementation.

Keywords: digital communication, middle school, early elementary, Facebook, Remind, Seesaw, parent-teacher communication

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Introduction

Parent communication is essential for providing a well-rounded, successful education for all students (Jerome, 2006; Kilgore, 2010; Oostdam & Hooze, 2013). Technology has evolved to facilitate this communication, and enhance the parent-teacher relationship (Barrera and Warner, 2006; Flowers, 2015; Kraft & Rogers, 2014). Teachers and parents alike struggle to figure out how to use technology most effectively to develop this relationship further, ultimately benefiting students. Teachers have tried to use various types of methods to reach out to parents, but it has been difficult to find one app or way that is effective in involving all parents in their child's learning (Mazza, 2013).

The technology available today allows parents and teachers to connect instantly through different digital applications. When teachers use these digital communication tools, parents can easily access information from their child's teacher using their phone, tablet, or computer. During this study, research was designed to offer insights regarding best practice methods of parent/teacher communication in the classroom using contemporary technologies that are available in the 21st Century.

Ensuring that parents have a clear understanding of what happens in their child's classroom allows for carryover of learning at home. Digital communication enables teachers to contact parents about a child's learning quickly and conveniently. Parents have the opportunity to read and respond to the message at a time that is convenient for them.

Access to technology is becoming more of the norm for students and families. However, educators should never assume that all parents have access to the technology at home. Educators should survey parents at the beginning of the school year to see who has technology access; this will ensure that digital communication will be successful between the parents and the teacher (Graham-Clay, 2005). With the use of the different types of digital parent communication tools, educating parents and teachers to use them properly is crucial for success. Urban-Woldron (2013), states that proper professional development and support are essential to integrate technology successfully.

Literature Review

Parent-Teacher Communication Benefits

Parent involvement enhances learning across all grade levels. Parent involvement includes the relationship between parent and child, parent and teacher, and parent and parent (Kilgore, 2010; McNeal, 2015; Ogletree, 2010). When parents are involved in their child's education, this has a positive effect on children's motivation, well-being, and learning outcomes at school (Jerome, 2006; Kilgore, 2010; Oostdam & Hooze, 2013). In this era of evolving digital communication, various means to establish productive partnerships between teachers and parents exist.

Family involvement in schools has been shown to play a significant role in student achievement. Overall participation from family members can influence a child's development and learning (Jerome, 2006). For instance, a review of 30 studies showed higher academic achievement in the children of parents who: take them on excursions, travel with them, read books together, guide television watching, and provide stimulating activities (Jerome, 2006). Children in families with more resources likely have had more of these experiences than children in poverty. School and home partnerships document success in the improvement of student behavior, which also improves student achievement (Jerome, 2006).

Table 1

<i>Benefits of Better Parent/School Collaboration</i>	
Beneficiary	Benefits
Students	<ul style="list-style-type: none"> • More positive attitudes toward school • Higher achievement, better attendance, and more homework completed consistently • Higher graduation rates and enrollment rates in postsecondary education • <u>Better Schools to attend</u>
Parents	<ul style="list-style-type: none"> • Greater knowledge of education programs and how schools work • Knowledge of how to be more supportive of children • Greater confidence about ways to help children learn • More positive views of teachers • <u>Greater empowerment</u>
Teachers and Administrators	<ul style="list-style-type: none"> • Greater teaching effectiveness • Higher expectations of students • Increased ability to understand family views and cultures • Greater appreciation of parent volunteers • Improved morals • <u>Greater sense of community</u>
<u>Community</u>	<ul style="list-style-type: none"> • <u>Greater strength through collaboration with schools and parents</u> • Greater impact of services through a comprehensive, integrated approach • Increased access to services for families • <u>Greater sense of community</u>
<i>Note.</i> National PTA, <i>Building Successful Partnerships</i> , 2000; Countryman & Eggleston, 1994; Shartrand, Weiss, Kreider, & Lopez, 1997; National Coalition for Parent Involvement in Education, 2002 (see Appendix C).	

Table 1. Benefits of better parent/school collaboration.

Teachers often think of parents as partners in education. Communication is critical to a child's success in school (Table 1). Therefore, the educator should create a warm and inviting environment for the parents. It is not enough for schools to just hope that parents will be involved in their children's education. Parent engagement will likely increase if schools are intentional in providing opportunities for parents to get involved (Mazza Jr., 2013). Considering the variances of parent's technological experiences, teachers need to be savvy in how they can

provide communication through both technology and paper correspondence. According to Mazza Jr. (2013), “Communication is at the heart of family-school relationships” (p. 6). The following table offers numerous examples of the benefits of collaboration among students, parents, teachers, administrators, and community (Kilgore, 2010, p. 21).

Ogletree (2010) states that it is essential to create an inviting environment for parents in the school setting. Teachers play a crucial role in providing an environment where parents feel welcome to interact and participate in their child’s education, as well as creating the parent-teacher partnership (Kilgore, 2010). When teachers and parents are communicating, both parties should place the child at the center of their attention to create a more favorable environment for all involved. Kilgore (2010) states that teachers can create positive interactions by demonstrating their knowledge of the student as a whole, rather than sharing bits and pieces about the student (Kilgore, 2010). Positive interactions enable the parents to see that the teacher cares about the child and has taken the time to get to know their child on an individual level. This process forms strong partnerships between parents and teachers.

Digital Communication Tools and Strategies

Teacher communication with parents is continually evolving and becoming more accessible with new technologies introduced every day (Kraft & Rogers, 2014). Given the variety of free or reasonably affordable means to enable digital parent-teacher communication, our literature review sought sources that provided evidence around the efficacy of various types and methods of communication.

Communication between home and school is enhanced when teachers incorporate technology to keep parents up-to-date on events in the classroom and school (Graham-Clay, 2005; Olmstead, 2013; Patrikakou, 2016). Advances in digital technology can increase the ease and frequency of parent-teacher communication and provide meaningful information (Barrera & Warner, 2006). Incorporating digital tools as a communication method enables teachers and parents to quickly exchange information with each other about a child's academic progress (Palts & Kalmus, 2015).

Some consistent findings across studies of digital parent-teacher communication by Barrera and Warner (2006), Flowers (2015), and Kraft and Rogers (2014) included:

- Parents wanted more positive communication
- Parents appreciated digital communication
- Teachers were able to provide regular feedback about each student's performance
- Improvement messages (such as suggestions on how a student could improve specific academic skills) were more impactful than the positive messages (such as sharing that their child did a good job at school)
- Parents were more likely to discuss the improvement messages with their child resulting in more academic success

In Barrera and Warner's study (2006) technology-facilitated communication efficiently engaged teachers and parents in helping students progress. In particular, digital communication between teachers and parents that facilitates problem-solving leads to more significant student

progress, which in-turn encourages positive parent-teacher relationships (Barrera & Warner, 2006).

Flynn & Nolan's (2008) study findings concluded that parents were wary of receiving phone calls from teachers as they were widely considered to be negative. Graham-Clay (2005) suggest using "good news calls" to make phone calls a more positive outlet for communication. Calling parents and telling them encouraging information about their child's academic progress or compassionate actions reinforces desired behaviors (Graham-Clay, 2005).

Websites are another popular strategy used by teachers to convey relevant information to parents. Classroom websites allow for parents to view updates in their child's classroom at any hour of the day (Graham-Clay, 2005). Students can post digital portfolios, pictures, videos, and share learning goals and progress (Graham-Clay, 2005). Websites can afford students the opportunity to collaborate with their teacher to design and maintain the site (Graham-Clay, 2005). School websites can provide timely feedback for parents and be useful in supporting communication between schools and parents (Olmstead, 2013).

Parents and teachers alike find that emails are a very convenient way of communicating with their child's teacher for both small and significant issues (Thompson, Mazer, & Flood, 2015). According to two recent studies, when parents and teachers exchange information, email is the preferred method of communicating (Olmstead, 2013; Thompson et al., 2015). Although email is an efficient way to interact, teachers and parents should use this tool cautiously (Flynn & Nolan, 2008). It is difficult to let the recipient know what emotion or what tone the sender is trying to convey in an email message (Flynn & Nolan, 2008).

However, text messaging is one of the most common forms of communication in the 21st Century (Lazaros, 2016). According to Lazaros' (2016) study, parents felt that text messaging was a more efficient form of communication than a traditional phone call home. Parents like texting because it gives them quick, direct access to teachers (Lazaros, 2016). Parents preferred getting a message on their smartphone especially when it came to behavior and social issues with their children (Thompson et al., 2015). Most teachers stated they did not want to text a parent with their cell phone. Due to this concern, teachers can utilize texting tools and have parents sign up to receive an email-text message (Lazaros, 2016). Some text messaging tools that are available for teachers are Remind, ClassPager, and Google Voice (Olmstead, 2013).

Overall, smartphone use expands the modes of parent-teacher communication including private social media channels (Thompson et al., 2015). Facebook, for example, facilitates two-way communication between teachers and parents about upcoming events and information about their child's class (Thompson et al., 2015). Social media supports parent-teacher interaction, but should not be the only way teachers contact parents. Providing a variety of methods for communicating with parents differentiates the two-way communication between home and school (Mazza, 2013).

Preparing for Successful Implementation

State and federal laws mandate professional development for teachers to prepare them for the full range of needs in the classroom (Mereoiu, Abercrombie, & Murray, 2016). Teachers spend significant time learning highly effective teaching practices; although it appears teachers

may need more time learning how to improve communication between school and home.

Professional development on effective communication with families requires additional time and opportunities to develop, assimilate, and process new knowledge (Mereoiu, Abercrombie, & Murray, 2016).

Research shows that teachers realize the vital role of technology in teaching and learning (Urban-Woldron, 2013). For educators to successfully integrate technology into their classroom practices, they need to be supported by their administration and peers at multiple levels: theoretically, pedagogical and methodological (Urban-Woldron, 2013). Teacher satisfaction improves when training includes varied methods for integrating technology for both in class and online technology integration practices (Urban-Woldron, 2013).

Family and Culturally Related Issues in Digital Communication

Communication with parents is an integral part of involving families in the learning environment and process. Proper professional development in communication skills for teachers is crucial to make this happen (Graham-Clay, 2005). When moving to digital communication tools, teachers must carefully consider the means for conveying a respectful, open-ended parent-teacher relationship.

The National Association for the Education of Young Children (NAEYC), sent a survey to parents whose children were attending both center and family-based child care centers looking for child-related guidance. The conclusion of this study found that parents regarded advice from

child care workers as intrusive. Parents also believed that teachers needed more training in parent communication, especially when it came to challenging topics (Whiteman, 2013).

Teachers provided with professional development on cultural value systems are more likely to take parent's perspectives, schedules, and potential needs into consideration (Graham-Clay, 2005). The more professional development teachers receive about family cultures, the more this is reflected in the school community and culture. These teachers are also more likely to help other teachers to develop similar skills (Graham-Clay, 2005).

Language Considerations

Teachers and parents can learn to work together, but when they do not speak the same language, this can become a challenge. The majority of middle school educators and administrators are monolingual English speakers (Rodríguez-Castro, Salas, & Murray, 2016). Monolingual educators see this as a roadblock when trying to communicate caring and trustworthiness to non-English speaking parents. Similarly, English Language Learner (ELL) parents may lack confidence in their basic English communication skills or be unsure of the role they should play in school (Rodríguez-Castro et al., 2016).

In trying to bridge the gap between non-English speaking parents and English speaking schools, many schools have created systems of support for communication. Both Harlem Success Academy (New York) and Valley Crossing Community School (Minnesota) established a mass texting service to let parents know about school events, meetings, school delays, or cancellations due to bad weather (Villano, 2008). The message alert systems (CellTrust and Instant Alert) also

helped in overcoming language barriers, as parents can choose to listen to a voicemail alert in another language with the touch of a button. Parents reported feeling more included and appreciated as they began to get more involved through this mass system of communication (Villano, 2008).

Parent involvement in education enhances learning across all grade levels, and technology helps to facilitate that participation (Kilgore, 2010; McNeal, 2015; Ogletree, 2010). Parent-teacher communication promotes problem-solving and leads to an increase in student success, thus contributing to positive parent-teacher relationships (Barrera & Warner, 2006). Teachers play a significant role in providing an inviting environment where parents feel welcome to interact and participate in their child's education, as well as create the parent-teacher partnership (Kilgore, 2010).

Communication needs to be frequent and meaningful for it to be effective (Barrera & Warner, 2006). When teachers communicate with parents about their child, they should discuss the positive behaviors as well as the negative behaviors. Calling home with the positive actions students take and students' good news makes for more productive communication among parents and teachers (Graham-Clay, 2005). When having digital conversations, it is essential (yet tricky) to let the recipient know your tone and overall feel of the text (Flynn & Nolan, 2008).

Parents and teachers are partners in education. Parents should feel capable of getting involved and welcomed in the school setting (Oostdam & Hooze, 2012). To do this efficiently, teachers must have open and active lines of communication. Substantial evidence supports the merits of culturally relevant, caring and improvement-oriented parent-teacher communication.

By synthesizing the research on why and how communication should happen to promote the best outcomes, and identifying the strengths and weaknesses of various available tools, we will be able to improve our digital communication practices going forward to meet each students' and families varied needs.

Discussion

Based on our literature review findings and previous experiences with parent-teacher communication, our research will use three different digital tools in our early elementary and middle school contexts to facilitate parent-teacher communication: Remind, Seesaw and Facebook. We will focus on these essential questions: To what extent does each tool facilitate active parent engagement in their students' learning? How do the different tools work? What are the costs and benefits of the different tools for the varied stakeholders in our study?

Methodology

Research Questions

A comparative study helps a researcher understand the similarities and differences that unique interventions provide (Routio, 2007). A comparative *action research* study seeks to observe and understand these similarities and differences to directly improved practices (Routio, 2007). This comparative action research study examined the ways in which three specific digital tools:

Facebook, Remind, and Seesaw could be used to improve parent-teacher communication outcomes. Our central questions were: How do different parent-teacher communication tools impact parents and teachers at the early elementary and middle school level? What are the advantages and disadvantages of digitally facilitated parent-teacher communication in general, and with these different tools? Which tools have the most positive impacts and least demands on parents and teachers?

Description of Tools

Our study looked at implementing these three digital tools in three early elementary classrooms and four middle school classrooms. The three tools utilized were: Seesaw, Remind and Facebook.

- [Seesaw](#) is a digital portfolio that can be teacher or student-driven. Parents have the opportunity to see, save, share, and respond to their child's work throughout the day. Participants sign up using a link or QR code provided by the teacher and then must be approved by the teacher to join their student's journal. Teachers can add photos or videos to individual and multiple student journals for parents to view. The app also allows group and individual messages to be sent to families connected.
- [Remind](#) is a confidential service for sending and receiving text messages between the teacher and parents and/or students. Participants can sign up for Remind by using the link provided by the teacher or by sending a text message to the given

number. The teacher can send a group message to everyone or send an individual message. If the participants respond to a group or private message, only the teacher can read the message. The teacher can send one photo at a time to participants.

- [Facebook](#) is a social media outlet that allows parents to join a private group to view teacher's posts from the classroom. Teachers can add photos and videos for parents to view. Posts are only viewable by those accepted into the group by the group's administrator. Parents can comment on the posts publicly or use the Facebook Messenger app for private communication with the teacher.

Teachers offered instruction to parents and students on how to use each tool in several or all of the following ways (not all teachers offered *all* of the means listed below, but all teachers offered instruction to parents on how to use their communication tool):

- Printed directions in a letter sent home
- A demonstration of how to use the digital tool at open house night
- A screencast (video) issued to families via email or text (Facebook - Appendix A), (Remind - Appendix B), and (Seesaw - Appendix C)
- Teacher modeling of the practice with students in the classroom
- Additional support sessions offered to interested parents

Data Tools

The researchers collected data over a four-week period, and participation by parents was voluntary (Appendix D). Educators asked for parent input on parent-teacher communication strategies before the beginning of the intervention (Appendix E) and after the intervention (Appendix F) via Google Form. The target population included parents of 5-7-year-olds and 11-14-year-olds. This population included all parents without explicitly studying a particular classification of parents. In brief, researchers gathered information from four sources to compare the efficacy of the intervention with the three different platforms:

- 1) Teacher use of the tools
- 2) Parent interactions
- 3) Pre and post surveys from parents
- 4) Teacher reflections (Appendix G)

Implementation

The first research question that this study addressed was to what extent each tool (Facebook, Remind & Seesaw) facilitated parent-teacher communication. To answer this question each teacher completed a weekly survey recording how many “likes,” comments, emails, or other parent contacts that was initiated by a parent because of a shared post. The next research question that this study concentrated on was how each tool improves parent-teacher communication in regards to providing parents with information to view. To answer this

question, researchers recorded the number of posts they shared with parents each week, along with the total amount of parent views. Lastly, this study addressed the costs and benefits of each digital tool with different student populations. This data was collected by teachers completing a self-reflection survey each week and reported the time and benefits that they observed from using that digital tool. In addition to the self-reflection survey, parents were also sent a post-survey at the end of the four-week study. Parents answered questions and shared their opinion of the tool along with the strengths and weaknesses they found while using the tool. Many parents stated that they liked receiving updates from their classroom teacher and having reminders about upcoming events, assignments and test dates.

Researchers intended to develop an efficient, research-based model for improving parent-teacher communication using digital tools. By collaboratively gathering this data and comparing the three applications, teachers hoped to have more robust information to share with colleagues and other teachers about the costs/benefits of different tools for elementary and middle school populations in various age groups.

Each teacher recorded data weekly using a Google Form. We called these Facebook Analytics (Appendix H), Remind Analytics (Appendix I), and Seesaw Analytics (Appendix J). These were reviewed and aggregated over the study. The usage data for each tool gave each teacher the opportunity to reflect each week on outcomes of their attempted communication with parents. Each teacher collected data on how often parents interacted with the teacher through each digital tool. After the four weeks, we compared the data across the grades/classrooms. Through a generative process of sharing findings and observations, teachers, in collaboration

with their advisors, identified themes that emerged from their observations and notes.

Responsibilities for summarizing findings and capturing evidence were divided up between members, and then we took turns reviewing and improving our collective work.

Data Analysis

The subjects for this study were parents from early elementary and middle school classrooms in the Midwest. A total of 231 parents participated in the study over a four-week period during the 2017-2018 school year (Appendix K). Fifty-nine parents were from early elementary families, and 172 were from middle school families.

How many times did you use the communication tool this week?

26 responses

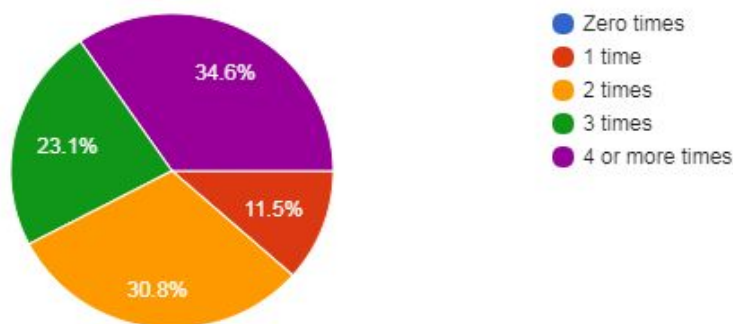


Figure 1: Aggregated use of tools by teachers each week.

Each teacher recorded her use of the digital communication tool they were using each week (Figure 1).

Two middle school classrooms and an early elementary classroom used Facebook. In the early elementary classroom, the educator posted classroom announcements, school events, and pictures of students working throughout the day. In the middle school classroom, posts were made weekly to inform parents and remind students of upcoming deadlines, assessments, and activities going on in the school.

Parents utilized the page to ask teachers about assignments or if they needed clarification on anything. The middle school teachers that used the Facebook app found that parents would initiate communication amongst one another for assignment clarifications or page numbers that students were to complete that night. Researchers also reported that parents were willing to answer each other's questions before the teacher had time to respond (Figure 2). Facebook appeared to create a middle school community which brought parents closer. In both settings, parents could comment on posts or privately message the teacher for additional conversation.

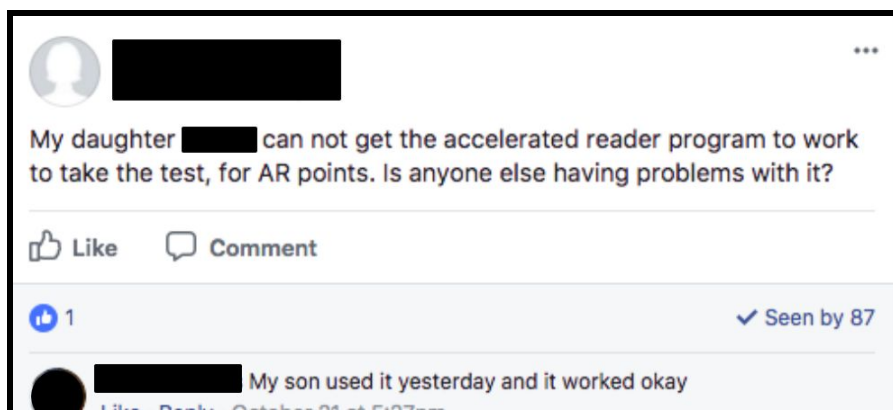


Figure 2. Facebook parent communication.

Remind was used in an early elementary school classroom and a middle school classroom. In the early elementary class, Remind was used to send out weekly announcements,

request for parent volunteers in the class, and private messages to specific parents regarding their child. In the middle school classroom, Remind was used to send classroom and school announcements to all parents. In both settings, this tool was also used to send private messages to individual parents if the information only pertained to their child. Parents were able to read and respond to the message promptly and could comment on or like each message the educator sent.

An early elementary classroom and a middle school setting for grades 6th-8th used Seesaw. In the early elementary classroom, the educator used Seesaw on a daily basis. Often, the educator used the application multiple times a day. In the middle school classroom, the tool was used once or twice a week to inform parents of what students were doing in class. Seesaw resembles a social media tool; parents can like and comment on teacher or student posts in a way that all group members can see, as well as send private messages to their child's teacher.

Parent Participation

Parents who chose not to participate in this study were asked a series of questions to get a closer look at why they made that decision. Parents who chose to opt out of Facebook raised concerns about privacy and time. One parent commented that, "In an age where there is so much sharing, I prefer to have some semblance of privacy and anonymity." This parent added, "There is only so much time in a day and in a life, and I would rather spend it with people that are present in my world and extremely important to me." Another parent shared that he does have a Facebook account, but uses it for work purposes only. Parents who chose not to use Facebook

shared that they would like to be contacted by email or text which they felt could be more on their own terms and would not connect their child's education to their personal lives.

Two parents stated that they opted out of Remind because they did not have a smartphone or the ability to receive text messages. One parent said they did not have the financial means to have a more expensive phone. Another parent stated their preferred method of communication was to receive a phone call from the teacher rather than a text message.

One parent who chose not to participate in Seesaw mentioned that they did not have Internet access at home and did not have a smartphone. Therefore, they could not use the communication tool. Another family stated they did not know how to use it and did not want to take the time to learn because the teacher could email or call if they wanted to get a hold of them. Several middle school families spoke different languages, so they may not have had the means to participate, may not have understood the directions, may not have wanted to participate for similar reasons as voiced by other families, or they may not have understood the purpose of the interaction.

Researchers have the following suggestions for obtaining maximum parent involvement:

- Host a session to give parents an opportunity to sign up for the tool.
- Include translators for English language learners in the process of getting parents connected to their teacher's tool.
- Give additional assistance to families who lack access to technology at home.
- Provide directions for the tool in a family's native language.

- If some families can't or won't participate, be sure that all communications are also available in alternative formats and be sure to send private communication to families not participating using appropriate means.

Parent-Teacher Communication

The first research question this study addressed was: To what extent did each tool (Facebook, Remind, and Seesaw) improve parent-teacher communication? To answer this question, each teacher completed a weekly survey recording how many “likes,” comments, emails, or other parent contacts that educators initiated because of a shared post. Teachers mainly used their digital tools for sharing classroom events, projects, test dates, and pictures of students.



Figure 3. Facebook parent-teacher communication.

In elementary classrooms, teachers rely on take-home folders to transport papers between school and home. Take-home folders allow teachers and parents to communicate by providing a consistent location to look for important papers. The Facebook post above provided a reminder to parents to be sure they are sending the folder back and forth (Figure 3). The conversation that followed allowed parents to express concern about lost folders and make arrangements for new ones to be given if needed.

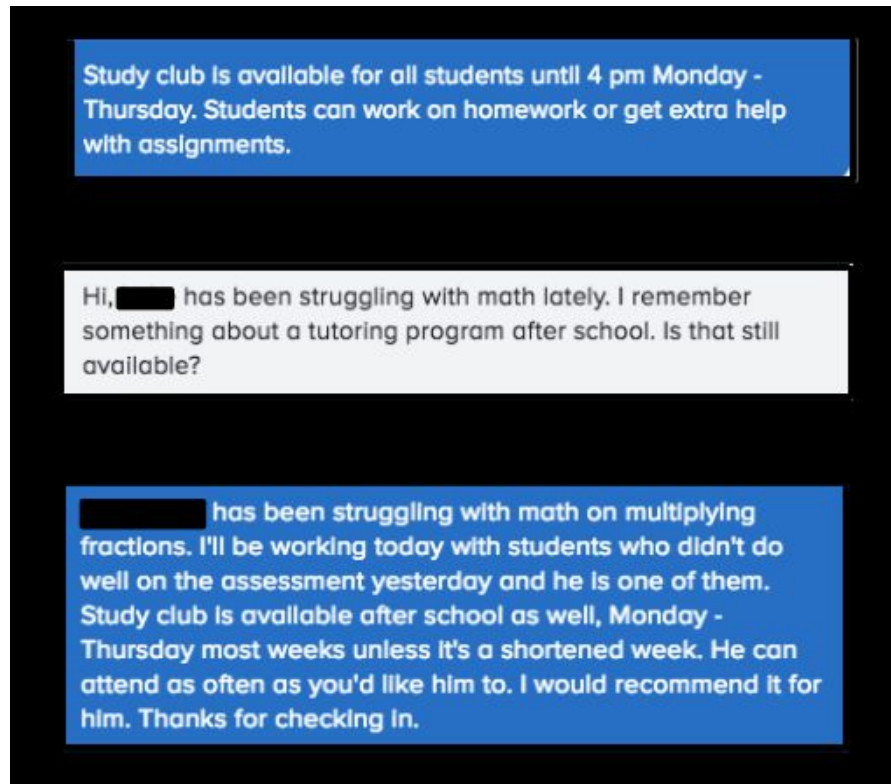


Figure 4. Remind parent-teacher communication.

In middle school, students struggle with getting their homework completed on time. The teacher encouraged students to attend study club for extra help, but students were reluctant to participate because it is after school and they are ready to go home. The first message was sent to parents to let them know about study club because more times than not, parents are unaware of this opportunity. The second message was from a parent asking about study club, and the last message was the teacher's response to the parent (Figure 4). After the teacher sent the first message, five more students started attending study club to get extra help with their homework and to have a quiet workplace.

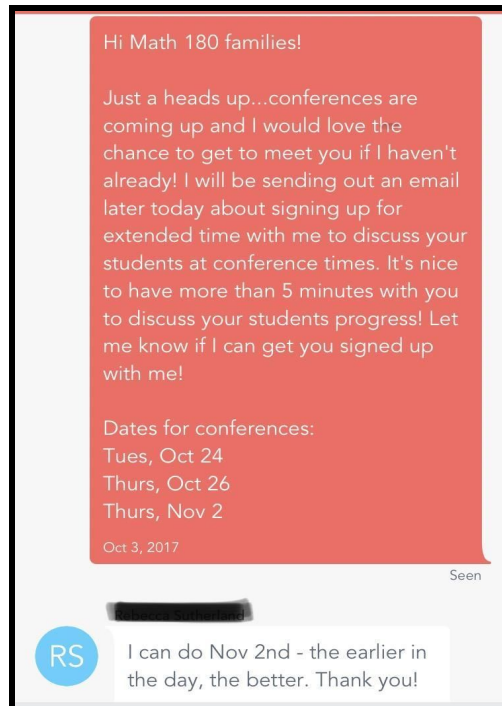


Figure 5. Seesaw parent-teacher communication.

Math intervention classes consistently have low attendance for parent-teacher conferences in the middle school classroom. The Seesaw app was beneficial to remind parents about upcoming conferences and to give families an easy way to communicate directly with the teacher to set up specific conference times (Figure 5). Private messages through the app were helpful in communicating directly with parents in a timely manner because most parents immediately received a notification on their phone.

Communication Tool	Number of Pre-Survey Responses	Number of Post-Survey Responses
Facebook	48	39
Remind	37	20
Seesaw	23	7
Total	108	66

Table 2. Number of parent survey responses.

To determine the effectiveness of the digital communication tool on parent communication, researchers analyzed pre and post parent survey results (Table 2) as well as teacher self-reflections. A pre-survey was sent to participants before the study began (Table 3).

Communication Tool	Number of parents who were familiar with tool prior to beginning the study.
Facebook	57
Remind	16
Seesaw	19

Table 3. Number of parents familiar with each tool prior to beginning the study, out of 108.

In the pre-survey, researchers asked participants to rate (1-5) how important they felt parent-teacher communication was for the success of their child at school the previous year. The majority classified parent-teacher communication as *very important* (Figure 6).

Importance of Parent-Teacher Communication in 2016-2017

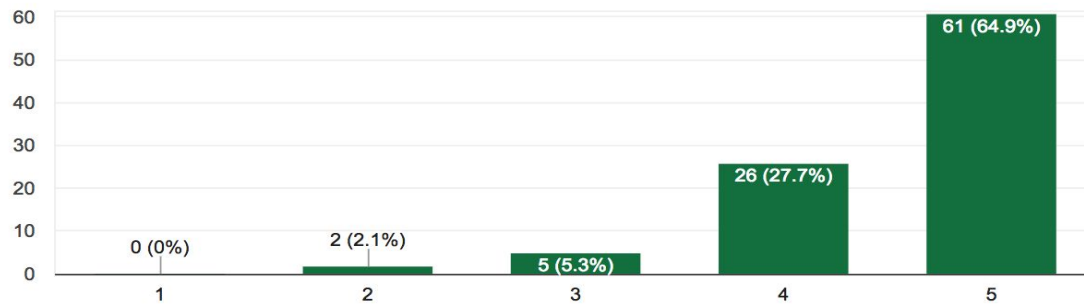


Figure 6. Importance of parent-teacher communication in 2016-2017. The 1 represents no importance with a gradual increase and 5 being very important.

A post-survey was also sent out to parents that asked whether they believed having this digital communication tool benefited their child's learning experience (Figure 7). In Figure 7, 56.1% of parents felt that parent-teacher communication was important in their child's success at the time of this study. Of the parents who partook in the post-survey, 95% percent of them agreed that the communication tool was helpful in communicating with their child's teacher.

Importance of Parent-Teacher Communication in 2017-2018

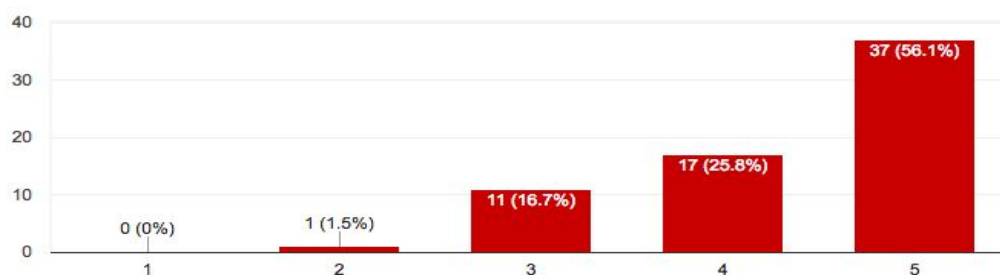


Figure 7. Importance of parent-teacher communication in 2017-2018. The 1 represents no importance and 5 being very important.

In both the pre-survey and post-survey, there were no parents who thought parent-teacher communication was insignificant to their child's success (Figures 6 & 7). It is important to note that the information in these charts may be skewed due to the number of pre-survey participants being significantly higher than the number of post-survey participants. At the end of the four-week study, forty-two fewer parents completed the post-survey. The low response rate may have to do with the amount of paperwork parents are asked to fill out for their children in school. When the study first began, it was the beginning of the school year, and completing the pre-survey was the first thing researchers asked of parents.

Qualitative Data Analysis

Based on the self-reflections, the early elementary teacher that used the Remind app felt that parents seemed to be appreciative of the quick reminders that she was able to send throughout the week. For instance, after an update on picture retake day, 90% of parents liked and/or commented on the post. The next day, students who were retaking their pictures had the necessary forms--perhaps as a result of the reminder sent from the teacher. The middle school teacher used the Remind app to clarify questions about a math assignment and was able to tell parents instantly with the app that the assignment was not homework, but instead, just extra practice for students and they did not need to return it.

An early elementary teacher that used the Facebook app stated that she used the communication tool to help set up a party committee and communicate with parents through that application. Parents reported that it was helpful to see what everyone had planned for the party

right in the same thread. Food and materials were not doubled up, and all parents that were interested in helping got a chance to volunteer. The middle school teachers that used Facebook had to rely on this tool for the first month of school for parent-teacher communication due to the school's LMS (Learning Management System) not functioning correctly. When parents had questions or concerns about assignments or other school-related activities, parents used the private group to communicate with the teachers.

The early elementary school teacher used the Seesaw app daily to post images of student work, pictures, and videos of students. Some posts were private to one parent, and others were posted for multiple parents to see. The teacher also used the app to message parents about lost clothing, yet relied on email for more direct and immediate communication. The middle school teacher used the Seesaw app to communicate directly and quickly with parents by sending private messages about their students. These teachers also felt that it was useful for showing parents what students were working on in the classroom so that parents could better support students in their work at home.

According to the researchers' weekly self-reflection survey, all the researchers felt that their digital tool was helpful in facilitating parent-teacher communication. At various times, the researchers reflected that they were hoping parents would get announcements of upcoming events, important dates, classroom procedures, and reminders by using their selected communication tool. Based upon the data gathered, teachers felt each communication tool facilitated valuable parent-teacher communication throughout the four-week study. Moreover, the return on the amount of time and energy was high. Once each tool was established, and

families understood how to access the tool, it was very efficient to connect the right information with the right group of parents.

With parents that chose not to participate or who were unable, teachers noticed diminished parent-teacher communication--along with student-parent communication. Parents were not as frequently updated with classroom announcements and did not have the opportunity to view pictures, classroom events, test & project dates, and reminders sent from teachers.

Quality and Frequency of Parent Engagement

Originally we asked how each tool improves parent-teacher communication. However we realized we didn't have an easy way to make a general comparison across experiences for different settings in previous years, the question changed to: To what extent does digital sharing of information elicit active parent engagement? To answer this question, researchers recorded the number of posts shared with parents each week, along with the total amount of parent views. The charts (Tables 4, 5, 6) below share the data that educators collected during this four-week study.

	Middle School Teacher		Early Elementary Teacher	
	Total Posts	Average Percent of Parent Views Per Post	Total Posts	Average Percent of Parent Views Per Post
Week 1	2	80%	3	100%
Week 2	2	77%	3	100%
Week 3	2	83%	3	100%
Week 4	2	85%	4	100%

Table 4. Amount of parent views: Remind.

With Remind, the early elementary teacher had a higher percentage of parents viewing each post, as shown in Table 4 above. It is important to take into consideration the number of parents in each grade. The middle school teacher had 65 participating parents, while the early elementary teacher had 20 parents participating. The Remind teachers sent home the printed directions to all of the families in the classroom (Appendix L). Parents could sign up to receive the teacher's messages through email or text message. For every parent that chose to sign up for Remind, the teacher got a notification telling which parent had signed up. In some families, both parents signed up for Remind, and in others, just one parent downloaded the app. A few parents commented that they liked how quick messages were to send and they said the teacher had a fast response rate. Both researchers had parents comment they enjoyed getting reminders for activities happening in the week and the private messages about their child.

The elementary school teacher used Remind to send out weekly announcements, changes in the schedule, upcoming events, and private messages. The teacher found it helpful to know who was reading the messages that were being sent out. This enabled the teacher to clarify through Remind if there was any miscommunication between home and school. With private messages, the elementary school teacher and parents found Remind to be a helpful tool with some behavior issues that needed to be addressed right away, a sick student, or a positive comment about their child's day. Remind was a quick way for the teacher and parent to communicate. Remind was more efficient than sending a note home in the folder, which often gets lost in transition. At parent-teacher conferences, a parent shared that they prefer to receive notes and announcements digitally. The elementary school teacher will continue to use Remind

as a way of communicating with parents. The positive responses from parents and the sense of community she felt established by the interactions on Remind are reasons why she wants to continue using this tool.

The middle school teacher mainly used Remind for classroom and school announcements. At conferences, parents stated they were thankful for this digital communication tool. One parent said that their child does not talk about school at home, and this tool enabled the parent to know what is going on in their child's education. At the middle school level, when a paper copy gets sent home; it rarely makes it into the parent's hands. With Remind, the teacher can send the paper electronically as a PDF to parents, and they receive it immediately. The teacher can see how many parents the message was delivered to, which parents read the message, and which parents did not read the message. The teacher could contact the parents (using a different form of communication) who did not read the message if it was of high importance.

Remind was the most useful for the middle school teacher when private messages were sent to parents. Field notes for this teacher indicated that she noticed consistently receiving a reply within minutes after sending an individual message to a parent via Remind. This was a quick and productive way to contact a parent. Remind can also translate messages into many different languages. One Spanish speaking parent contacted the teacher and was extremely appreciative of this communication tool because the family speaks very little English. They were happy that they could finally communicate with a teacher and not have the language barrier.

Amount of Parent Views: Facebook

	Middle School Teacher 1		Middle School Teacher 2		Early Elementary Teacher	
	Total Posts	Average Percent of Parent Views Per Post	Total Posts	Average Percent of Parent Views Per Post	Total Posts	Average Percent of Parent Views Per Post
Week 1	2	79%	4 or more	80%	3	76%
Week 2	1	65%	1	61%	4 or more	76%
Week 3	4 or more	77%	3	70%	4 or more	90%
Week 4	4 or more	95%	2	71%	4 or more	76%

Table 5. Teacher posts and parent views: Facebook.

For Facebook, the elementary teacher was on maternity leave; this was the first time a Facebook page was used for communication in this classroom. Facebook was the primary communication source between the teacher, long-term sub, and parents. Parents were given a link to join the page along with a video containing step-by-step directions for joining Facebook (if needed) and then finding and joining the private group. The teacher and long-term sub used the Facebook group for photos, classroom announcements, and school announcements. Parents responded to posts with comments and questions for the teacher and sub. Parents also used the threads to ask questions of the teacher and sub about classwork, volunteer opportunities and school/classroom policies. The teacher, sub, and parents used the Facebook messenger app to private message about student behavior and academic concerns. The sub reported liking the ease of using Facebook and private messaging for communicating with parents. The elementary

teacher and sub averaged 4 or more public posts per week, and an average of 76% of the posts were viewed (Table 5).

In the middle school classrooms, Facebook was mainly used for alerting parents to upcoming test dates, activities in the classroom/school, reminders, and student awards. Based on the post-survey comments and private responses, parents appreciated the weekly communication and thought it was a useful tool. One parent commented that it helped hold her child accountable for school work, especially in the middle school setting, where students are gaining independence. Another parent shared that they liked having a place to reach out to other parents that were on the same middle school team. The middle school parents viewed teacher posts from 61% to 95% of the time (Table 5). The middle school teachers had prior experience with using Facebook as a communication tool for their classrooms.

An advantage of using Facebook as a parent-teacher communication tool includes a quick response time for parents and teachers. Facebook makes it easy to post multiple pictures and videos into one album quickly. You are also able to tag parents in videos, photos or posts to make it simple for them to find information regarding their child. It provides an opportunity for ELL families to use the tool with the translation feature. Teachers can create a closed or private group which means that, at least in theory, only those within the group can see the posts. (Someone could take a screenshot or download and forward materials if they wanted to do so.) Finally, teachers can view who has opened or viewed the post or messages, which is a more concrete measure of parents getting a message than when something is sent home hard copy or even by email (Table 6).

A disadvantage of this tool is that some parents preferred not to have a Facebook account which made using the tool for communication difficult. The middle school teachers in this study ended up doing extra work in e-mailing the same information to parents that were not on Facebook.

Amount of Parent Views: Seesaw

	Middle School Teacher		Early Elementary Teacher	
	Total Posts	Average Percent of Parent Views Per Post	Total Posts	Average Percent of Parent Views Per Post
Week 1	2	10%	27	100%
Week 2	2	10%	17	97%
Week 3	1	30%	33	97%
Week 4	2	35%	38	97%

Table 6. Amount of parent views: Seesaw.

For Seesaw, the early elementary classroom had parents with a district-wide reputation of being highly involved in their student's academic lives. All early elementary parents attended the training for implementing the communication tool at the school's Open House and were connected to the app by the end of the event. The early elementary teacher frequently posted, averaging 28.75 posts/week, of which no less than 97% of the posts parents viewed (Table 6). It is important to note that the early elementary teacher also had three years of previous experience using the app before this study, which contributed to this teacher posting more regularly than the middle school teacher. Also, the large number of posts were frequently the result of uploading an

individual photo of each student, which Seesaw didn't allow to happen as a batch upload the way Facebook would.

Parents reported that the Seesaw app gave them insight into their child's school routine, acting as a "window" into their child's day. Some parents felt that in addition to the training on how to use the app at the beginning of the school year, an additional session on how to best utilize the app would have been helpful for parents to feel even more comfortable with using the app. One parent was curious about consolidating all forms of digital communication into one space, where Seesaw could be used to send a private message directly to the teacher. Several parents stated that while Seesaw was great for sending quick pictures and reminders, they preferred email for communication that required more immediate responses. Many parents were not aware of the app's ability to deliver private messages, which suggests teachers explicitly model how to use the messaging feature when introducing the app to parents.

The elementary teacher used Seesaw for reminders about lost clothing, videos showing student routines (i.e., beginning of the year guided discoveries for classroom materials, Daily Five reading block implementation, and math station overviews). In the parent response survey, elementary parents were particularly excited about the tool; saying they enjoyed seeing videos of their kids' day-to-day routines and appreciated the immediacy of both classroom and school updates. Another parent commented on the posts being useful conversation starters for when her son got home from school.

Compared to the elementary teachers, the middle school teacher had less parent participation; of 18 possible participants, 10 parents connected to the app. In the middle school

classroom, there was not an opportunity to have parents come to school and get setup with the app, so parents were sent the paper instructions (Appendix M) for setting up the app on their own. Parents were also sent an email with a link to access the setup online and get connected to their students' Seesaw journal. Unfortunately, after the researchers established the guidelines of this study, the district technology department informed the middle school teacher that the app could not be used for parent communication because the middle school had other communication tools already in place. This was a serious limitation to the studies efficacy in this setting. The teacher still used the app to communicate with families, but students were not able to post to their own journals.

Although the middle school was in the same district as the early elementary classroom, the middle school had a higher percentage of English language learners and families of lower economic status. The lack of parent involvement of the students in this class is reflected in the data where the percentage of parent views were much lower than in the early elementary classroom (Table 6). Parents who used the app liked the features and appreciated seeing what their students were doing in the classroom.

Overall, parents were satisfied with the communication tools used in this study. Parents appreciated the information that was shared using each of the communication tools in both the early elementary and middle school settings. Parents also enjoyed seeing what was happening in the classroom through the use of the digital tool. All researchers felt that the tools helped communicate information that would have otherwise been lost in transit between school and

home. Teachers could follow through with parents as necessary if they did not view the posts, while highly involved parents had the ability to react or respond to posts instantly.

Opportunity for Response

The third research question that this study focused on was how each tool provided parents with the opportunity to respond to the information shared. The digital tools used in the study allowed parents and teacher to communicate immediately--or at a time convenient for the individual.

For Facebook, researchers posted a message to the entire private group for all parents to view. Facebook participants could comment on a post the teacher made, react to it, or choose to send a private message in response. The Remind app gave teachers the opportunity to send out whole class, group or individual messages. Parents could respond to the messages privately to the teacher. The Seesaw tool allowed for posts to be either kept private for each student or have multiple students tagged in the same post. Parents could both comment and react to posts, and teachers could see when parents viewed the posts. Seesaw could also be used to send messages to parents in either a personalized message or note intended for all parents to read. Figure 8 below shows the average percentage of parents that reached out to teachers each week regarding posts.

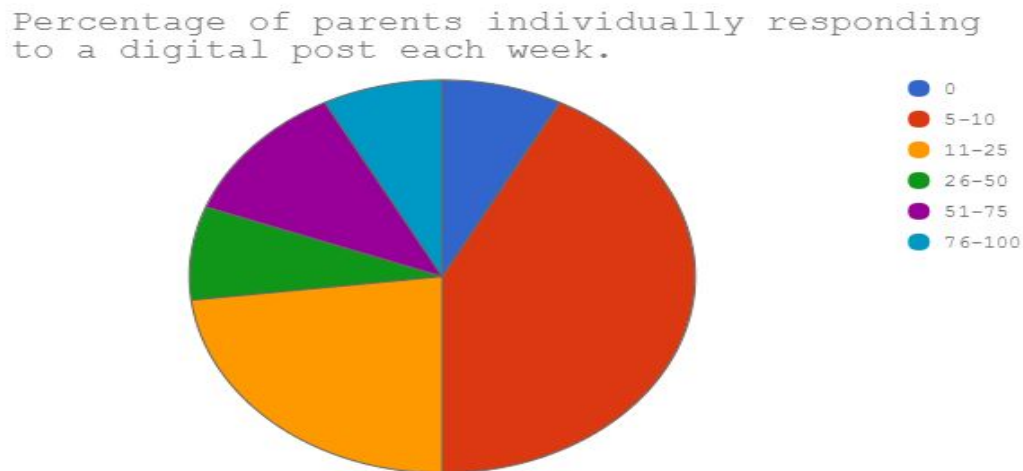


Figure 8. Percentage of parents individually responding to a digital post each week.

The findings for the number of parent active comments/responses varied for each digital tool and by grade level (Figure 8). Remind averaged 1-2 comments per week, with the middle school teacher having a total of more parent comments/responses. Facebook was the most successful tool in regard to parent comments/replies, with all three teachers recording 2-10 remarks each week. In the early elementary classroom, Seesaw had a significant variation in the number of responses or comments to posts depending on the content of the post. Some posts that accrued more replies included pictures from a field trip outing and videos of classroom activities.

Below (Figures 9, 10, 11) are some examples of posts that accrued the most “likes” or “reactions” by parents in each tool.

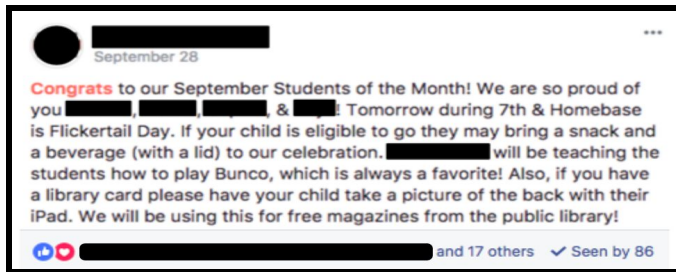


Figure 9. Most reacted to post on Facebook.



Figure 10. Most reacted to post on Remind.



Figure 11. Most reacted to post on SeeSaw.

All three digital tools promoted direct parent-teacher communication, offering parents the opportunity to respond to each post. Facebook and Seesaw received more parent responses compared to Remind. This may be because Remind has a different layout and does not allow for public comments whereas the other tools allow for more public responses.

In analyzing the teacher reflections and comparing those to the data (Table 7), all teachers found that *parent reactions were more likely when posts were more personal and included things such as pictures, awards, or individual student posts*, explaining the reason for the broad range of numbers from week to week. It is also important to note that the middle school teachers received fewer comments/responses overall compared to the elementary classrooms. The middle school teachers felt that this was due to parents being less involved in their child's academics in general during middle school than they typically are in elementary school.

Costs/Benefits of Using Specific Digital Tools

This study sought to compare the costs and benefits of each digital tool in an early elementary and middle-level setting. The data collected by teachers each week reported the time and benefits that they observed from using their tool. Teachers noted that creating their posts took anywhere from thirty seconds to twenty minutes with an average of approximately 5 minutes per post. Setting up the tool and getting parents enrolled was the most time-consuming part of using the tool.

Facebook's initial setup included the teacher setting up a private Facebook group through their account or creating a Facebook account to use for this purpose. Parents have to find the group on Facebook, which can be confusing if there is more than one group with that name. Teachers would need to provide information in a video or print on how to sign up for Facebook, navigate the website or mobile app and how to find or join a closed/private group before gaining access to the group's page. This being said, the most challenging part of using this tool was the setup. Letters were sent home to parents to remind them to access the group. It took approximately one week before the majority of parents had completed the steps necessary to be a part of the private group. Another factor to consider is that the analytics within Facebook may have precluded a parent from seeing the post naturally on their Facebook feed. Depending on factors such as how often they review the site, how long they spend on Facebook, if they click the link to look directly into the private group's posts or rely on posts there being visible in their feed, and/or how many other Facebook friends they have competing for space in their main feed.

Researchers who utilized Facebook reported posts took anywhere from 30 seconds to 20 minutes to post, depending on the length of the post and whether pictures or videos were attached. The middle school teachers were surprised by how many parents viewed the posts and by how many comments/private messages they received because of the posts. *Compared to prior year's communication strategies, using Facebook gave teachers a quick, easy way to share information with many parents at one time. By using this tool, students did not have to bear the burden of communicating information from teacher to parents. Parents appreciated the*

immediacy of announcements, while students did not have to worry about papers getting lost in their backpacks.

The early elementary teacher who used Facebook as a communication tool for this study reported that she felt a Facebook group was impersonal. The teacher observed that the same 5-6 parents were commenting on the posts or sending individual messages. The early elementary teacher also utilized the private messaging feature on Facebook to personally message parents about concerns or issues particular to a student.

It is essential to consider whether or not parents chose to have their Facebook account notify them when the teacher created a post in the group. Parents have the option to receive notifications right away, to only get notified with the highlights of the group, or to turn off notifications entirely. There is currently no way for a group administrator to view how many parents set up to receive all notifications. Since the percentage of parent views varied each week, researchers learned that Facebook should not be the only form of communication with parents.

Remind setup involved the teacher creating an account with Remind and then creating a class. The teacher printed off the directions and sent a letter home with each student explaining to parents how they could sign up for Remind. Parents had three options to receive messages via Remind. Option one was to receive messages on their smartphone by downloading the mobile app. Option two was to receive text notifications if they did not have a smartphone, and the last option was to sign up for email notifications using a desktop computer. Once parents signed up for messages, the teacher could send a message to an individual parent or message all parents. It took the teachers about 30 seconds to two minutes to create the message and send it to parents.

Remind was user-friendly for both English and non-English speaking families. The app can translate messages sent from the teacher to the parent's native language.

Seesaw was easy to set up and took less than a minute to get each parent connected to their student's digital journal. The early elementary teacher was glad to have offered the training on how to use the app at Open House, as it was an event where parent attendance was expected to be high, if not 100%. Depending on the content of the post, it took the early elementary teacher no more than five minutes to post to the app (the app only allows for up to five minutes of video recording time per post, which the teacher saw as a disadvantage).

Table 7, below gives an easy to read advantage and disadvantage chart for each tool.

Advantages, Disadvantages & Considerations

	<u>Remind</u> A text or email consolidation software that preserves participant and teacher privacy by not sharing phone numbers.	<u>Facebook</u> The most popularly used social media tool in the United States.	<u>Seesaw</u> A learning management system that provides child-friendly interactive features around multimedia content.
Advantages that are true for all tools	<ul style="list-style-type: none"> • Closed group • Group messages • Private messages • Quick response time from parents • Parents have the ability to like or comment on posts • Efficient way for teacher to communicate once it is set up and parents enrolled 		
Unique Advantages	<ul style="list-style-type: none"> • Can attach and upload PDFs and other documents • Can send notes, pictures, and links to individual parents or the group • Translation to other languages • Students can receive texts--if they want to, can afford to, and have devices to do so • Ability to view which parents read the message • Many parents are already using • Ability to schedule 	<ul style="list-style-type: none"> • Can share links to documents or other resources • Can send notes, pictures, and links to individual parents <i>if they use FB messenger</i> or the group • Translation to other languages • Can easily upload multiple pictures, videos, and links at a time • Can tag parents in a photo, video, or post regarding their child • Ability to view which parents read the message • Many parents are already using • Parents have the ability 	<ul style="list-style-type: none"> • Can attach and upload PDFs and other documents • Can send notes, pictures, and links to individual parents or the group • Easy for students to post and respond as well as parents if they have devices to do so • Ability to see parent views • Parents have the ability to comment or like posts • Parents can receive email reminders when a post is posted to their child's journal • Can easily take

	<p>announcements</p> <ul style="list-style-type: none"> ● Free for teachers to use 	<p>to like or comment on posts</p> <ul style="list-style-type: none"> ● Could share to public space if all agree to do so ● Free for teachers and parents to use 	<p>pictures and add voiceover or make short movies</p> <ul style="list-style-type: none"> ● Could share to a public SeeSaw blog space if all agree to do so ● Free for parents to use and can be used by teachers at “standard” level by teachers for free (was used at free level in this study)
Disadvantages	<ul style="list-style-type: none"> ● Standard text messages rates apply if participants receive the message as a text message ● 140 character limit when sending a group message ● Can’t send videos directly -- need to upload them into a holding space and then send link ● Can only send 1 picture at a time ● Parents cannot communicate with each other ● Middle and secondary school students have multiple teachers which could create complicated set of classes for parents to access and follow 	<ul style="list-style-type: none"> ● Parents have to create a Facebook account in order to access private class page. ● Posts can be bumped and missed due to continued conversation on an older post ● Not all parents have group notifications turned on ● Privacy of posts not guaranteed due to the opportunity for others to take screenshots ● Participants are subject to marketing of products and services during their interaction with the school materials ● Middle and secondary school students have multiple teachers which could create complicated set of classes for parents to 	<ul style="list-style-type: none"> ● It costs \$120 a year for a Seesaw plus Teacher account which has added features that are compelling ● District-wide account costs start at \$15 per student (potentially negotiable) ● Videos recorded through Seesaw are limited to 5 minutes long ● Can only post ten pictures at a time ● Middle and secondary school students have multiple teachers which could create complicated set of classes for parents to access and follow ● Translations to other languages are not

		access and follow	available
Other Considerations	<ul style="list-style-type: none"> Parents need education on how to access and use 	<ul style="list-style-type: none"> Parents have to find the group Some parents may need an instructional video on usage Parent crosstalk creates another stream of information the teacher needs to attend to 	<ul style="list-style-type: none"> Checking “Seesaw” app isn’t a part of most parents daily activities the way checking texts and Facebook is for many. More training is required to help parents use the tool than the other tools

Table 7. Advantages, disadvantages & considerations of Remind, Facebook, and Seesaw as parent-teacher communication tools.

Data from the parent post-survey was analyzed to compare the costs and benefits of using each tool. Seventy-two percent of parents who completed the post-survey stated that they liked receiving updates from their classroom teacher and having reminders about upcoming events/dates, assignments and test dates.

When asked what the downfalls were of each digital tool, parents had nothing negative to report. Many parents stated that they liked receiving updates from their classroom teacher and having reminders about upcoming assignments and test dates. All parents who participated in the Facebook study recommended other teachers to use Facebook as a parent-teacher communication tool. Ninety percent of parents who used the Remind app stated they would like to see future teachers use this tool. Sixty percent of parents who were part of the study using Seesaw recommended this tool, although all elementary parents raved about how much they loved it.

Findings

The researchers formed the following conclusions:

- Parents who participated in this survey agreed that the communication tool was helpful and valuable in enhancing parent-teacher communication.
- It is evident that these tools increased communication and dialogue between parents and teachers, as well as parents and students compared to the level of communication that happens without a digital tool to facilitate regular interaction.
- Parents who completed the post-survey had no complaints or concerns about any of the digital communication tools and recommended using these applications in the future.
- Using digital communication tools is an efficient and effective way for teachers to communicate with a large group of parents promptly.
- Parent engagement will likely increase if schools are intentional in providing opportunities for parents to get involved. All teachers reported using the digital tool for classroom announcements enabled parents to be more engaged in classroom activities.
- Communication between home and school is enhanced when teachers incorporate technology to keep parents up-to-date on events in the classroom and school. All teachers reported using each tool was a quick and easy way to communicate with all/or most of the parents in the classroom at one time.

- Parents had a positive experience and attitude towards using the digital communication tool provided to them. Ninety-four percent of parents reported their child benefited from the digital tool used in their child's classroom.
- In the early elementary classrooms, Seesaw was the most preferred digital tool. Elementary parents that used Seesaw reported that they liked seeing pictures and videos of their child during the school day.
- In the middle school classrooms, Facebook was the most favored. Facebook is the most widely used social media tool today. This is a comfortable tool for most parents to use giving parents a learning curve and feeling comfortable.
- Parents overwhelmingly felt comfortable using the tools and reached out to the teacher if they needed help signing up.
- Parents found the digital tools to be most useful when the messages sent pertained to reminders or announcements relating to the classroom.

Action Plan

The data that researchers gathered gave evidence that helped them understand strengths and weaknesses of the three tools studied regarding parent engagement; developmentally appropriate characteristics of the different platforms; demands on the teacher related to implementation and management of the applications; and, evidence of potential for improving student outcomes. All teachers involved in this research will continue to use the tools in their

classrooms. The early elementary teacher who utilized Facebook plans to try out Remind in addition to Facebook next year due to the results of this study.

Teachers who utilized Seesaw anticipate fewer posts in the future, since the app developers recently added a new feature. Teachers are now able to post up to ten photos in one post, compared to the previous capability of posting only a single picture at a time. The weeks where there was a higher post count was due to the teacher uploading photos of multiple kids individually for one cohesive project. This teacher also intends to consolidate all other ways she communicates with parents into a single forum. Seesaw allows users to upload documents and send personal messages, so it could potentially be used as an alternative to email when communication with parents is necessary.

This study indicates possibilities for future action research investigating more deeply the effects of using each digital tool. A more extensive study that included a larger population, with the addition of a control group, could further investigate the benefits and problems of digital parent-teacher communication. A longer study in which we could examine long-term impact on students who have historically been less successful in school would be of particular interest. Another topic worth considering is the impact on teacher quality of life issues. Does the use of digital tools increase the number of off-hours work for teachers or decrease those overall?

Teacher participants in this study all intend to continue to use a digital communication tool in their classrooms in future years. Another option for further research would be to conduct a more extensive study to examine the effects digital tools had on classroom communication over an extended period. Additional research could be done to collect data on the demographics of the

population the researchers are studying and the effectiveness of the communication tool within different populations of the school.

Digital communication is on the rise in many classrooms. With further and more in-depth research, teachers would be able to gather valuable information to help in making communication tools better and more useful for teachers and parents. Further research could also be conducted in the upper elementary classrooms and high school classrooms to see which digital tool is the most effective in reaching out to the parents of students at various age levels.

With the modern-day rapid advancement of digital technologies, the researchers of this study think it is imperative that teachers be trained in how to use these technologies. Teachers should also continue to seek professional development training that keeps them up to date on the latest digital tools they choose to integrate into their teaching. Digital tools can continue to strengthen the teacher-parent relationship, facilitating individual and group communication between school and home -- as long as its users are knowledgeable of how to maximize the tool's benefits.

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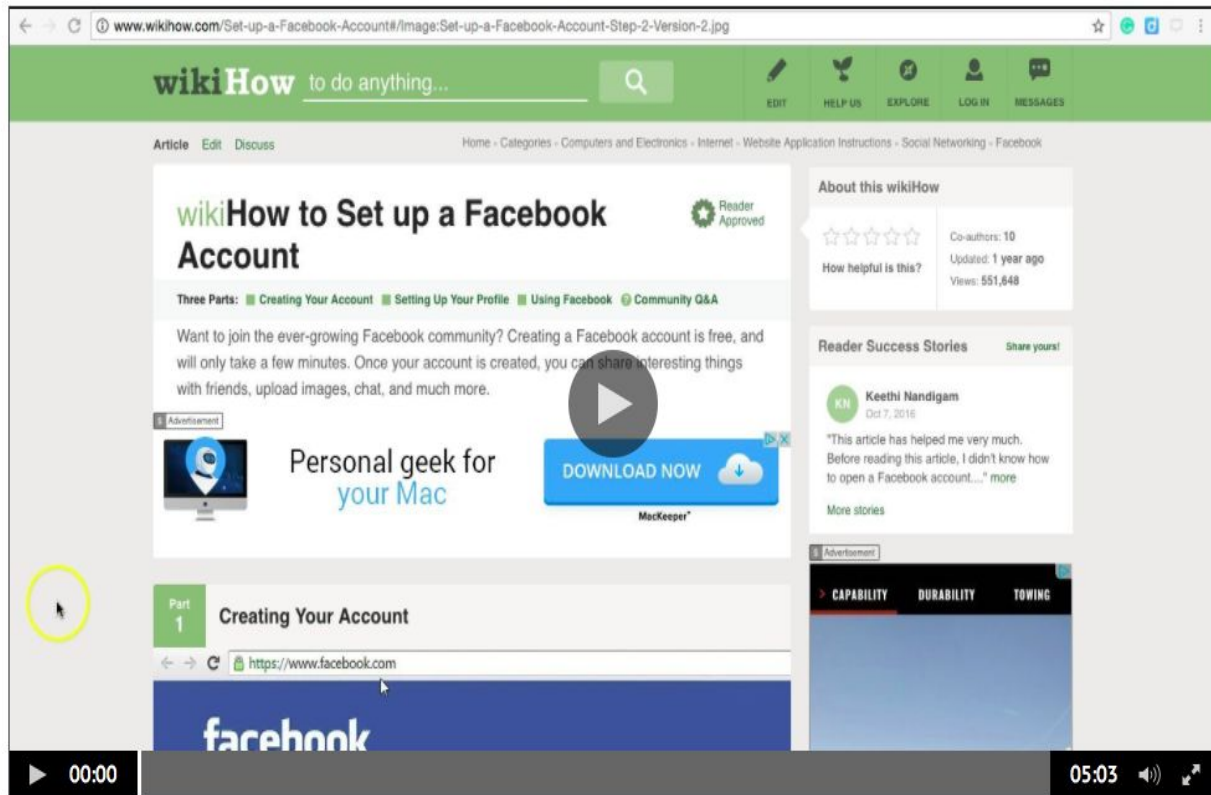
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Appendices

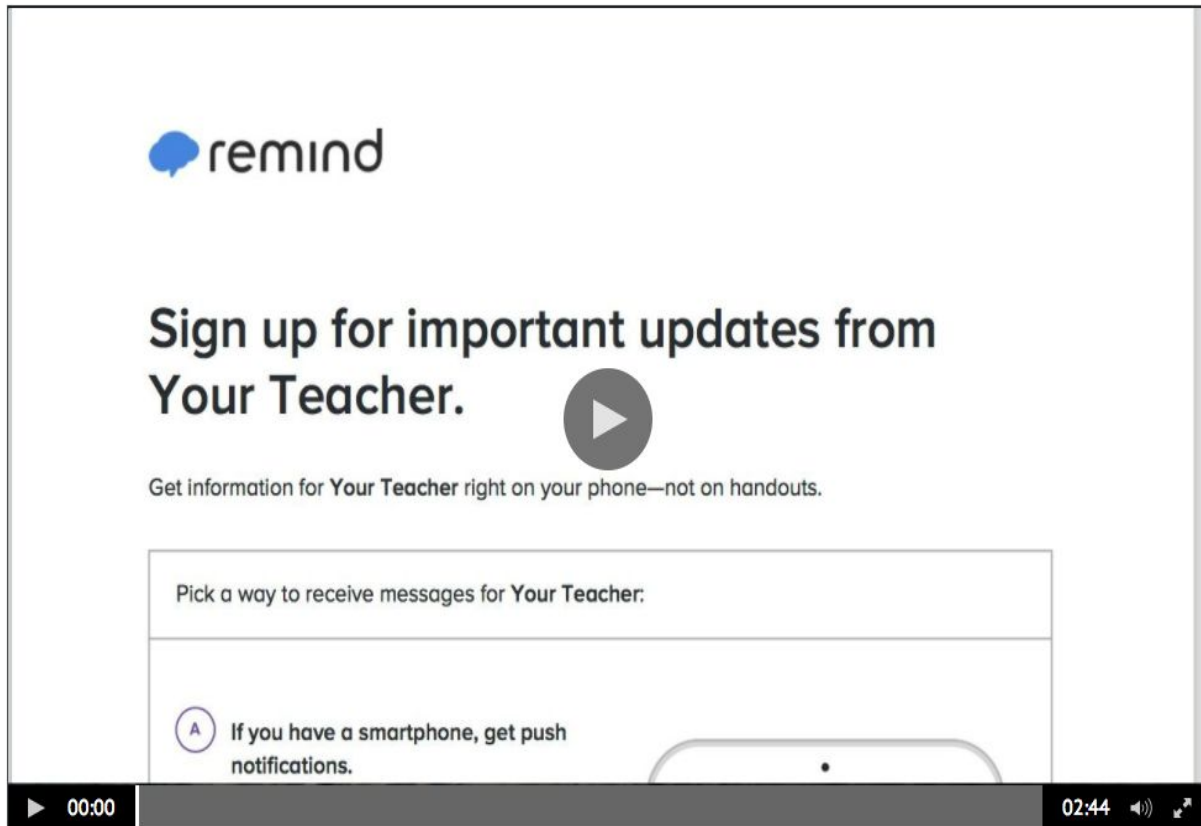
Appendix A

Facebook Screencast Directions



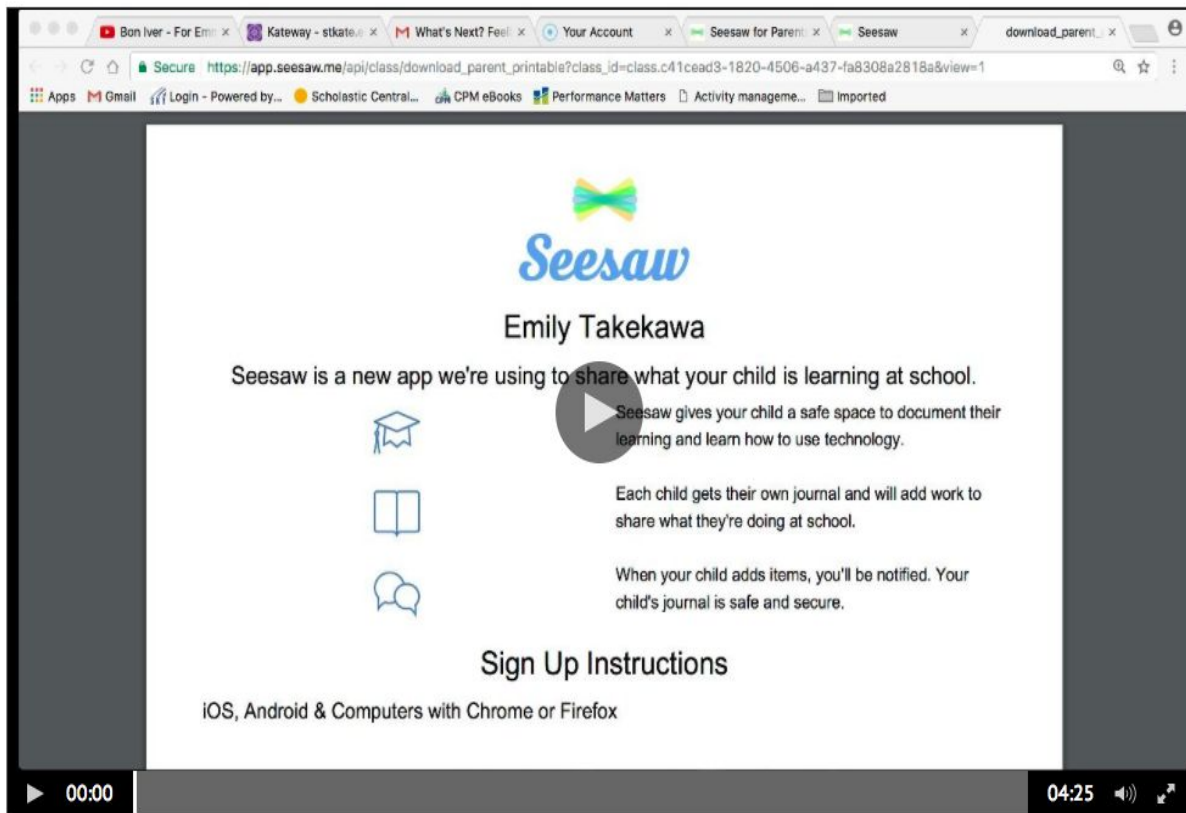
Appendix B

Remind Screencast Directions



Appendix C

Seesaw Screencast Directions



Appendix D

Parent Consent Form

**Parent-Teacher Communication Tools
Parental Consent Form**

Dear Parents,

In addition to being your child's **insert grade** teacher, I am a St. Catherine University student pursuing a Masters of Education degree. An important part of my program is the Action Research project. I am studying **insert tool** and its effectiveness as a parent-teacher digital communication tool. I am working with a faculty member at St. Catherine University and an advisor to complete this particular project.

I will be writing about the results that I get from this research, however, none of the writing that I do will include the name of this school, the names of any parents, students, or any references that would make it possible to identify outcomes connected to a particular student. Only I will have access to the identifiable data for this study; I will keep it confidential. There are no foreseeable risks involved with this study.

When I am done, my work will be electronically available online at the St. Kate's library in a system called SOPHIA, which holds published reports written by faculty and graduate students at St. Catherine University. The goal of sharing my final research study report is to help other teachers who are also trying to improve the communication with parents using technology.

In the coming weeks, I will be utilizing **insert tool** to communicate with you. I will be sharing weekly updates, pictures of student projects, and upcoming events & dates. In order to evaluate the effectiveness of this tool, if you decide to participate, I will be asking that you complete a pre-survey and post-survey during my study.

This study is voluntary. If you decide you do want to be a participant and/or have your data included in my study, simply complete the voluntary surveys I will be sending to you via email or text. If you want to answer my questions about parent-teacher communication but do not want to have your answers included in my study, just call me or email me your responses rather than completing the ten minute online survey. If you decide you do not want to participate and/or have your data included in my study, you do not need to do anything. There is no penalty for not participating.

If you have any questions, please feel free to contact me, **insert e-mail**. You may ask questions now, or if you have any additional questions later, you can ask me or my advisor Siri Anderson, ssansderson2@stkate.edu, who will be happy to answer them. If you have other questions or concerns regarding the study and would like to talk to someone other than the researcher(s), you may also contact Dr. John Schmitt, Chair of the St. Catherine University Institutional Review Board, at (651) 690-7739. You may keep a copy of this form for your records.

More Information

Please check all that apply.:

- ☐ I DO want to participate in this study
- ☐ I DO want to talk to you about this in person or over the phone

Signature of Participant in Research

Email or Text

Date

Signature of Researcher

Date

Please respond by **insert text**.

Appendix E
Pre-Survey for Parents using a Google Form

Pre-Survey on Digital Parent-Teacher Communication

Parents: Please note that participation in this survey is completely voluntary. Completing this survey indicates a willingness to have this information you share included in a study being conducted by your child's classroom teacher. Survey data will be confidential. We will not know which parents have or have not completed this survey. If you prefer not to have your input included in this study, but have information you want to share with the teacher, please contact her via email or phone call.

We have some questions to ask about your previous experience of parent-teacher communication. To get started: Did you have a child attending a school setting last year? *

☐ Yes

☐ No

Parents with Children in School Previously

Description (optional)

Parent-Teacher communication has been demonstrated to improve student learning outcomes in many studies over time. In the past year, how important would you say parent-teacher communication was for the success of your child at school?

	1	2	3	4	5	
Not at all important	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very important

On average, how often did you previously receive communication?

- ☐ Daily
- ☐ Weekly
- ☐ Every few weeks
- ☐ Once a term
- ☐ Other...

What type of communication, in the previous year, was the most valuable to you?

Short answer text

Is there anything about the previous years' parent-teacher communication that was frustrating to you, or that you hope is improved this year?

Short answer text

All parents

Your answers here will help us with our research, but will not influence the type of tool we use in our study.

What would you like us to know about your family, if anything, in terms of parent-teacher communication in general?

Short answer text

Which of these digital parent-teacher communication tools are you familiar with, if any? *

- ☐ Seesaw -- A learning management system that students use and parents/teachers can respond.
- ☐ Facebook Group -- A private group page on Facebook where teacher/parents can share updates and information that
- ☐ Remind -- A text based tool for private communication within a group of subscribers.
- ☐ School Website -- A publicly accessible website where general updates on the school/classroom are posted.
- ☐ Email List Serve -- A privately set up way for the teacher to broadcast general messages to parents as a group. Parent

Rank your current interest in participating in any of the options listed below.

	Unsure	Not at all interested	Somewhat interested	Very interested
SeeSaw	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facebook Group	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Remind	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Email List Serve	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Check all the places in which you currently have easy access to Internet or Wifi where you could access a digital message from your child's teacher:

- ☐ At work
- ☐ At home
- ☐ At library
- ☐ At family or friends homes
- ☐ None of the above

What types of electronic devices do you have readily available? (Check all that apply)

*

- ☐ Computer
- ☐ Smart Phone
- ☐ iPad
- ☐ Tablet
- ☐ Phone with limited data and no apps
- ☐ None of the above

This study is being completed by graduate students at St. Catherine University. To compare three tools being used for parent-teacher communication, each of the teachers listed below will be piloting one of the tools and comparing her experience of using it and parents' feedback about it with the other teacher's experience and parent feedback. Select the option that includes the name of your child's teacher:

*

- ☐ SeeSaw: Sasha Rieland; Emily Takekawa
- ☐ Facebook Group: Kylie Cline; Stephanie Bosch; Sarah Hochhalter
- ☐ Remind: NaTeal Bosch; Tanya Walther

Facebook Only

A private Facebook group allows a teacher to share classroom events and activities with parents and families that are members of that group. Joining the classroom Facebook page will not allow the other members who join the group to see your status posts or Facebook timeline -- unless those are already set to public. We will offer parents opportunities to learn more about how Facebook settings can be used to limit visibility to others as part of this research. NOTE: Children will not have access to this group, nor asked to create Facebook accounts. Only the teachers and parents will access the site.

How familiar are you with Facebook groups? *

- ☐ Very familiar (I have a Facebook account and use groups already.)
- ☐ Somewhat familiar (I have a Facebook account but haven't used groups.)
- ☐ Limited familiarity (I do not have an account, but I know what Facebook is and how others use it.)
- ☐ Not familiar (I do not have an account, and I don't really know how this would work.)
- ☐ Frustrated (I do not have an account, and I have no interest in having one or having my child's teacher use one.)

How would you prefer to receive instructions on how to set up your phone or computer so you can participate in this parent-teacher communication tool?

- ☐ Demonstrate the tool at parent-teacher night
- ☐ Email directions
- ☐ Post directions on your website
- ☐ Have my child teach me or set it up for me
- ☐ Text me directions
- ☐ Send directions in a pdf
- ☐ Send me a video showing how to do it
- ☐ Set up a meeting with me to help me
- ☐ I don't need any help at this time
- ☐ Other...

In what ways would you like your child's teacher to use Facebook?

- ☐ Homework or Home Activity Suggestions
- ☐ General Class Announcements
- ☐ Private Updates on my Child's Behavior or Progress
- ☐ Sharing Pictures/Videos of Student's Work
- ☐ Sharing Pictures/Videos of Students
- ☐ None of the above

How often would you like to receive updates via Facebook, if at all?

- ☐ Daily
- ☐ Several Times a Week
- ☐ Once a Week
- ☐ Never

What questions or concerns, if any, do have for the teacher?

Long answer text

Remind

Remind is a text messaging application that allows teachers and parents to communicate quickly and efficiently via text, without revealing phone numbers to anyone in the group. When you join Remind, the software database uses your telephone information to send texts privately. There is no cost to register for a Remind account. But depending on your phone's plan, there could be charges to send or receive texts. Those costs would fall into the category of text sending/receiving to another phone. NOTE: Children will not have access to this group, nor asked to create Remind accounts. Only the teachers and parents will access this resource.

How familiar are you with the application Remind?

- ☐ Very familiar (I have used/or am using the tool previously.)
- ☐ Somewhat familiar (I have heard of it, but never used it.)
- ☐ Limited familiarity (I have never heard of it, but I understand the idea of texting and related costs on my personal account.)
- ☐ Not at all familiar (I have not heard of Remind, and I am unclear if there would be costs for me to participate.)
- ☐ Frustrated (I do not have a SmartPhone, and I have no interest in having one or having my child's teacher use a tool that uses texting.)

How confident are you about setting up your phone to receive texts that share information from school to home? *

	1	2	3	4	5	
Not Confident	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very Confident

How would you prefer to receive instructions on how to set up your phone or computer so you can participate in this parent-teacher communication tool?

- ☐ Demonstrate the tool at parent-teacher night
- ☐ Email directions
- ☐ Post directions on your website
- ☐ Have my child teach me or set it up for me
- ☐ Text me directions
- ☐ Send directions in a pdf
- ☐ Send me a video showing how to do it
- ☐ Set up a meeting with me to help me
- ☐ Meet informally with another parent to learn how to do it
- ☐ I don't need any help at this time
- ☐ Other: _____

In what ways would you like your child's teacher to use Remind?

- ☐ Homework or Home Activity Suggestions
- ☐ General Classroom Announcements
- ☐ Private Updates on my Child's Behavior or Progress
- ☐ Sharing Pictures/Videos of Student's Work
- ☐ Sharing Pictures/Videos of Students
- ☐ Other

How often would you like to receive updates via Remind, if at all?

- ☐ Daily
- ☐ Several Times a Week
- ☐ Once a Week
- ☐ Never

What questions or concerns, if any, do you have for the teacher?

Your answer _____

SeeSaw

SeeSaw is a learning management system that allows for communication between teachers, students, and parents. This program allows for activity completion by teachers or students, and then allows parents, teachers, and other students in the class to provide feedback on student work. Work inside the SeeSaw tool is private to members of the group, and the teacher can provide private feedback to the child that only the child and parents can see. NOTE: Children will have access to this, and will be using it as part of our regular classroom activities.

How confident are you in using a learning management system like Seesaw?

	1	2	3	4	5	
Not Confident	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very Confident

How familiar are you with the application SeeSaw?

- ☐ Very familiar (I have used or am using SeeSaw in another context.)
- ☐ Somewhat familiar (I may not have used SeeSaw, but I have used other learning management systems.)
- ☐ Limited familiarity (I have heard of learning management systems, or SeeSaw, but I have never used them myself.)
- ☐ Not at all familiar (I have not heard of SeeSaw and am unclear on this concept in general.)
- ☐ Frustrated (I do not want to have to learn how to set this up and have no interest in having my child sharing school information with me this way.)

How would you prefer to receive instructions on how to set up your phone or computer so you can participate in this parent-teacher communication tool?

- ☐ Demonstrate the tool at parent-teacher night
- ☐ Email directions
- ☐ Post directions on your website
- ☐ Have my child teach me or set it up for me
- ☐ Text me directions
- ☐ Send directions in a pdf
- ☐ Send me a video showing how to do it
- ☐ Set up a meeting with me to help me
- ☐ Meet informally with another parent to learn how to do it
- ☐ I don't need any help at this time
- ☐ Other: _____

Appendix F

Post-Survey for Parents using a Google Form

Parent Post-Survey

Parents: Please note that participation in this survey is completely voluntary. Completing this survey indicates a willingness to have this information you share included in a study being conducted by your child's classroom teacher. Survey data will be confidential. We will now know which parents have or have not complete this survey. If you prefer not to have your input included in this study, but have information you want to share with the teacher, please contact her via email or phone call.

* Required

Select the option that includes the name of your child's teacher:

*

Choose



Parent-Teacher communication has been demonstrated to improve student learning outcomes in many studies over time. In the past month, how important would you say parent-teacher communication was for the success of your child at school? *

	1	2	3	4	5	
Not at all important	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very important

How comfortable do you feel using the communication tool used by your child's teacher? *

	1	2	3	4	5	
Not comfortable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Expert

On average, how often did you receive communication during this study? *

- ☐ Daily
- ☐ 1-2 times per week
- ☐ 3 or more times per week.

Is there anything about the parent-teacher communication tool that was frustrating to you, or that you would like to see improved? *

Your answer

Did your child benefit from having this type of communication? *

- ☐ Yes
- ☐ No

Approximate how many times a week did you access the online communication, if any? *

- ☐ 0
- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4 or more

What type of information did you find the most useful? *

Your answer

What type of information was not useful? *

Your answer

Questions and/or comments for the teacher: *

Your answer

Would you recommend the use of this tool for parent/teacher communication in the future? *

- ☐ Yes
- ☐ No
- ☐ Maybe

Appendix G

Weekly Reflections for Teachers using a Google Form

Self Reflection

Here is where we will each reflect every week. A week is Sunday through Saturday.

Select the week you are reflecting on.

1. Week 1
2. Week 2
3. Week 3
4. Week 4

Which parent-teacher communication tool are you using?

- ☐ SeeSaw
- ☐ Facebook
- ☐ Remind

What did you hope parents would get from that communication?

Long answer text

How many times did you use the communication tool this week?

- ☐ Zero times
- ☐ 1 time
- ☐ 2 times
- ☐ 3 times
- ☐ 4 or more times

On average, how long did it take you to create these messages?

Short answer text

Was it helpful?

- ☐ Yes
- ☐ No
- ☐ Maybe

...

What fraction of your students' parents reached out to you this week in response to this communication tool?

- ☐ None
- ☐ 5-10% or 1-3 parents
- ☐ 11-25% or 4-5 parents
- ☐ 26-50% or 6-15 parents
- ☐ 51-75% or 16-20 parents
- ☐ 76%-100% or 21- 30 parents

Appendix H

Facebook Analytics for Teachers using a Google Form

Facebook Analytics

* Required

Recorders NAME *

☐ Stephanie

☐ Kylie

☐ Sarah

How many posts have you made for this week? *

Choose ▼

How many people liked or reacted your post or total posts? *

Your answer

How many times have your posts been viewed? *

Your answer

How many people commented in response to your post or posts? *

Your answer

Did any parents or guardians contact you in regards to a post you made? *

☐ Yes

☐ No

How many total parents liked your page or group this week? *

Your answer

Have any parents given any feedback on the use of this Facebook page or group? *

Your answer

Notes for the week... *

Your answer

Appendix I

Remind Analytics for Teachers using a Google Form

Remind Analytics

* Required

Recorder's Name *

☐ Tanya

☐ NaTeal

How many messages did you send this week? *

Choose ▼

How many total parents/guardians are signed up to receive messages through Remind this week? *

Your answer

How many parents/guardians read your message(s) this week?

*

Your answer

How many parents/guardians commented in response to your message(s) this week? *

Your answer

How many parents/guardians reacted to your message(s) this week? *

Your answer

Did any parents/guardians provide feedback about the communication tool this week? *

☐ Yes

☐ No

If yes, what was their feedback?

Your answer

Any additional notes for the week?

Your answer

Appendix J

Seesaw Analytics for Teachers using a Google Form

SeeSaw Analytics

* Required

Recorder's Name *

☐ Emily

☐ Sasha

How many posts/messages have you uploaded this week? *

Your answer

How many times have students posted this week? *

Your answer

How many people have viewed your posts this week? *

Your answer

How many likes or reactions have your posts received? *

Your answer

How many people have viewed student posts? *

Your answer

How many comments or reactions did students' posts receive? *

Your answer

Did any parents contact you regarding any posts this week? *

☐ Yes

☐ No

If so, what was the general reason for the contact?

Your answer

What did you notice this week about the communication you initiated this week with families?

Long answer text

Add a link to a communication you made with parents.

Short answer text

Your answer

Appendix K

Number of Parents that Signed Up for Communication Tool

Grade Level	Remind	Facebook	Seesaw
Early Elementary	20 out of 21	21 out of 21	22 out of 22
Middle School	65 out of 100	97 out of 105	14 out of 23

Appendix L

Remind Printed Directions



Sign up for important updates from [REDACTED]

Get information for [REDACTED] right on your phone—not on handouts.

Pick a way to receive messages for [REDACTED]

A If you have a smartphone, get push notifications.

On your iPhone or Android phone, open your web browser and go to the following link:

Follow the instructions to sign up for Remind. You'll be prompted to download the mobile app.



B If you don't have a smartphone, get text notifications.

Text the message [REDACTED] the number [REDACTED]

If you're having trouble with [REDACTED] texting [REDACTED]

* Standard text message rates apply.



Don't have a mobile phone? Go to [REDACTED] on a desktop computer to sign up for email notifications.

Appendix M

Seesaw Printed Directions



Connect to Seesaw to receive important updates from



Your child will post to Seesaw to share their learning with you.

Teachers will also send you messages and reminders.



Seesaw is private. You'll only see posts created by your child or their teacher.



From Your Smartphone

1. Download the free Seesaw Family app for iOS or Android
2. Choose "Create Family Account"
3. Scan this QR code using Seesaw's built-in QR code scanner
4. Create your account

From Your Computer

1. In a web browser, go to: 
2. Choose your child from the list
3. Create your account
4. Once you're approved by  you'll get access to Seesaw

Already Have an Account?

If you've used Seesaw before or have more than one child using Seesaw, follow these steps:

1. Sign in to your account in Seesaw Family app or on the web at 
2. Click on your profile icon, click "+Add Child's Journal" button, then scan the QR code above